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DATA OBTAINED IN THE EVALUATION OF THE TRAP SPOT TECHNIQUE IN SOUTHERN PINE BEETLE CONTROL.

A cooperative study between landowners, Texas Forest Service, Boyce Thompson Institute and U.S. Forest Service, Division of Pest Control, was to evaluate the effectiveness of the trap spot concept as a southern pine beetle control alternative in T.F.S. Grid Block 329 (=TEST); by comparison, standard control procedures were applied to Grid Block 380 (=CONTROL).

Grid Block 329 was selected for its record high in SPB infested trees throughout recent years; 380 was chosen as control for its vicinity to 329 and similar environmental conditions. Although sustaining similar losses during the recent SPB epidemic, 380 showed lower numbers of beetle infested trees during the previous years (TABLE 1).

TABLE 1 - Historical record of the number of spots and trees controlled in Grid Block 329 (TEST) and 380 (CONTROL) 1961 through 1968.

Year	GRID BLOCK 329		GRID BLOCK 380	
	Spots:	Trees:	Spots:	Trees:
1961	55	5,432	88	9,612
1962	83	5,593	55	9,633
1963	28	92	39	263
1964	36	915	26	656
1965	111	3,545	96	2,903
1966	131	4,108	77	1,580
1967	92	5,077	18	567
1968	67	3,488	23	1,207
Total:	603	28,250	422	26,421

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The experiment, however, did not follow the original plan too closely for a number of reasons. Poor weather conditions made much of the area inaccessible. The unexpected build-up of the SPB population to epidemic population levels in much of East Texas led to a shortage in manpower. As a result, the treatments desired could not be fully applied and much of the data originally wanted could not be taken. Nevertheless, two independent appraisals of the population trends in the test as compared to control areas are now available. One from an aerial survey conducted by the U.S. Forest Service, Division of Pest Control (TABLE 1) and another from the routine surveys performed by the Texas Forest Service and records taken by B.T.I. personnel.

TABLE 2 - Number of spots and trees containing active brood of SPB in Grid Block 329 (TEST) and 380 (CONTROL) detected in the U.S. Forest Service aerial survey of April 5 and August 28, 1968.

	Block 329 (TEST)	Block 380 (CONTROL)
April 5, 1968		
No. spots per M acres host type	2.77 ± 1.02	6.77 ± 1.27
No. of infested trees host type	34.74 ± 27.98	23.45 ± 14.66
Mean spot size	12.5	3.6
August 28, 1968		
No. spots per M acres host type	18.58 ± 3.18	9.34 ± 3.97
No. of infested trees host type	168.28 ± 151.8	94.58 ± 90.6
Mean spot size	9.3	10.5

TABLE 3 - Number of spots and trees controlled in Grid Block 329 (TEST) and 380 (CONTROL) February through September 1968 as compared with 1967 (Data in parentheses).

	Block 329	Block 380
SPOTS		
Feb./Mar.	7 (2)	1 (2)
Apr./May	20 (51)	2 (6)
Jun./July	37 (29)	12 (7)
Aug./Sept.	3 (10)	8 (3)
TREES		
Feb./Mar.	259 (32)	32 (14)
Apr./May	1,203 (3,242)	299 (52)
Jun./July	1,509 (1,267)	629 (477)
Aug./Sept.	517 (534)	247 (76)
TOTAL SPOTS	67 (92)	23 (18)
TOTAL TREES	3,488 (5,077)	1,207(567)
AVERAGE No. of trees/spots	52 (55)	53 (32)

Discussion: For all practical purposes, the difference in treatment between TEST (329) and CONTROL (380) was salvage logging in 329 and application of BHC control in 380.

Grid Block 329:

Except of 1963 and 1964 when the SPB population was low everywhere, Grid Block 329 had each year a similarily high number of controlled trees regardless of control procedures. The drop in the number of spots and SPB infested trees this year is contrasted by the general upward movement of beetle activity in 1968; but the drop is by no means significant.

Grid Block 380:

The number of trees controlled doubled when compared with 1967; but in 1967 the number of beetle killed trees was extremely low. Again, there is no significant change.

Population trends: The data of the U.S. Forest Service (TABLE 2) suggest that the number of active brood trees as found in April increased by September in the test block 4.9, in the control block 4.1 times.

The record of trees controlled (TABLE 3) indicates that the spring population (February through May) increased during summer by 1.4 in the TEST block, and 2.7 times in the CONTROL. The seeming difference between the two appraisals probably rests with the treatment. Infested trees were soon cut in the CONTROL, but left standing for a prolonged period of time in the TEST block.

Conclusion: There is not enough evidence that would convincingly speak for or against either of the two methods. Nevertheless, the lack of any significant development seems to fit well the empirical experience: Prescribed control did not prevent the population trend from going up, and salvage did not seem efficient

enough to lower losses significantly. However, salvage could have been intensified, but probably not the chemical control.

Suggestion: It is suggested to terminate the test and turn the responsibility for ground checking etc. back to the landowners. However, one more survey should be made early Spring 1969 to check whether there are then signigicant differences in population trends.